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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/612,288 | 07/07/2000 | Kenichiro Sakai | 826.1611/JDH | 8400 |

21171 7590 09/17/2003

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EXAMINER

WU, JINGGE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2623

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/612,288

Applicant(s)

SAKAI ET AL.

Examiner

Jingge Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/7/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' response to the last Office Action, filed August 7th, 2003 has been entered and made of record.
2. The objection on claim 3 is expressly withdrawn upon the newly found reference.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, and 4-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US5513304 to Spitz in view of US 6295385 to Takaoka et al. and US 5381163 to Yokoyama et al.

As to claim 1, Spitz discloses a document image correcting device correcting an input document image to be a properly oriented image, comprising:

a line orientation determining unit determining whether a line orientation of an input document image is either vertical or horizontal (Fig. 1, element 44 and 46, col. 6 line 16-col. 7 line 7);

a character image extracting unit extracting a character image from the input document image (Fig. 1 element 38, col. 13, lines 21-31);

a character orientation detecting unit detecting whether or not to require a rotation, a rotation angle if the rotation is required, which are intended for correcting the character image extracted to be properly oriented, in corresponding with the result of

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line orientation determining unit (Fig. 1 element 42, Fig. 2a-2b and Fig. 4a-4b, col. 7 lines 8-23, col. 9 lines 36-42); and

a document image correcting unit correcting the input document image to be a properly orientated document image based on a result of detection made by the character orientation detection unit (Fig. 1, Fig. 2a-2b and Fig. 4a-4b, col. 7 lines 8-23, col. 9 lines 36-42).

Spitz does not explicitly mention mirror image flipping which is well known in the art.

Takaoka, in an analogous environment, discloses a orientation determining function by rotating character mirror image and recognizing the character (Fig. 12c, col. 10, lines 21-67).

Furthermore, Yokoyama, in an analogous environment, discloses flipping character mirror image and recognizing the character (Fig. 56A-B, col. 28, line 59-col. 30 line 64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the schemes of Takaoka and Yokoyama in the device of Spitz in order to accurately determine the orientation of the document image (Takaoka, col. 1-col.2, Yokoyama, col. 14 line 53-col. 15 line 52).

As to claim 2, the combination of Spitz, Takaoka and Tokoyama further discloses rotating character image or by flipping the mirror image (Tokoyama, Fig. 56A-B, col. 28, line 59-col. 30 line 64);

a character recognition unit performing character recognition (Takaoka, col. 9 line 63-col. 10 line 19) and output a character code and likelihood of the recognition (Takaoka, col. 10 lines 20-67); and

detecting whether or not to require the rotation, the angle of the rotation, and the mirror image flipping, which are intended for correcting the character image(Tokoyama, Fig. 56A-B, col. 28, line 59-col. 30 line 64).

As to claims 4-5, the combination of Spitz and Takaoka does not explicitly mention the ratio of black pixel and aspect ration of the character.

Examiner takes Official Notice that these features are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ratio of black pixel and aspect ratio of the character in the device of Spitz in order to accurately determine the orientation of the document image.

As to claims 6-8, all limitation are addressed with regard to claims 1-2.

As to claim 9, Spitz discloses a line image extraction unit extract whole or part of a line from an input image as a line image (Fig. 3b-3c). Other limitations are addressed with regard to claim 1.

As to claims 10-13, all limitations are addressed with regard to 9, and 6-8.

As to claims 15-17, all limitations are addressed with regard to claims 1-2, and 6-8.

As to claim 14, Spitz discloses a limitation of the character orientation detecting unit excluding some of a plurality of patterns (word spaces) the include a pattern of the character image within the input document image (col. 11-col. 12). Other limitations are addressed with regard to claim 1.

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Spitz , Takaoka and Yokoyama, further in view of US 6064767 to Muir et al.

As to claim 3, the combination of Spitz , Takaoka and Yokoyama discloses other limitations (see claims 1-2) but does not mention language identification.

Muir, in an analogous environment, discloses a language identification system to identify the language of input document image (Figs. 1-2, abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Muir in the device of Spitz in order to accurately determine the language of the document image so as to accurately recognize the characters (Muir, col. 1 line 23-col. 2 line 26).

Contact Information

6. Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu

Primary Patent Examiner

